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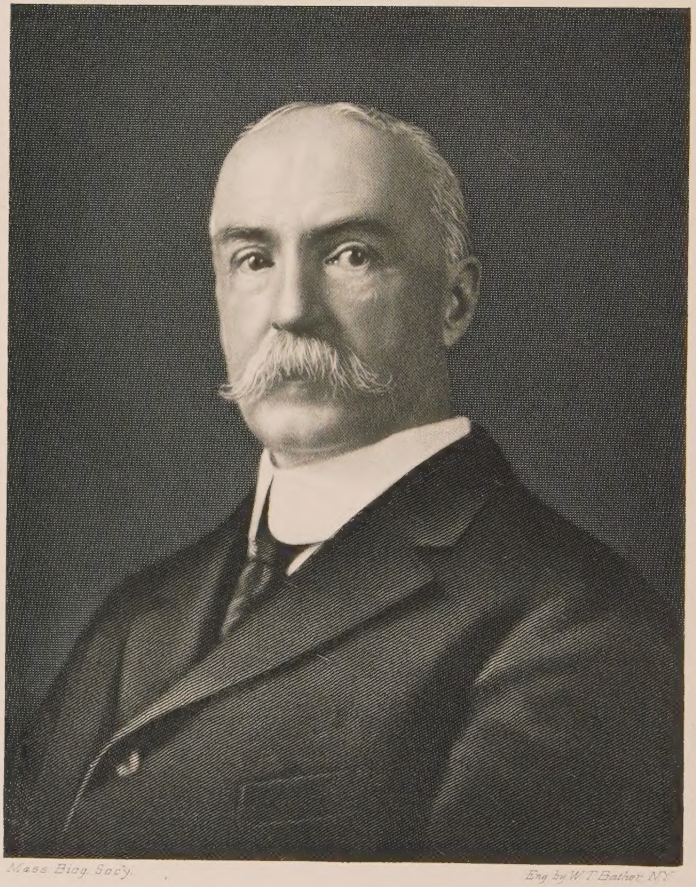

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C. E. Faxon

Rhodora

JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

Vol. 20. July, 1918. No. 235

CHARLES EDWARD FAXON.

C. S. Sargent.

(With portrait.[1])

Charles Edward Faxon died at his home in Jamaica Plain on the 6th of February, 1918. He was born in Jamaica Plain, then a part of the town of Roxbury, January 21, 1846, and was the son of Elisha and Hannah Mann (Whiting) Faxon. Elisha Faxon was a direct descendant in the eighth generation from Thomas Faxon who came from England to America about 1647 and settled in Braintree, Massachusetts. The father died when Charles was nine years old and the oldest son of the family, Edwin,[2] took his place and exercised a wise influence on the younger children. Under his guidance Charles and his youngest brother Walter learned to love Nature. With him they roamed the fields and woods in what is now Greater Boston which sixty years ago were full of interest for the lovers of Nature. He taught them to look at trees, to gather and observe flowers, to watch birds and collect their eggs, and it is probable that the two boys would never have become distinguished in science without this brother's inspiration and guidance. The Faxon family was a remarkable one even for New England in the middle of the last century. The children were taught music, and constantly attended the best concerts and the opera. They studied French at home and as children read it fluently, and no effort was spared for their intelligent education. As a child

[1] For permission to use the plate from which the portrait of Mr. Faxon is printed Rhodora is indebted to the courtesy of the Massachusetts Biographical Society.

[2] See Rhodora, ii. p. 107.

Charles Faxon taught himself to draw, using as his model the studies of landscape and of trees published by J. D. Harding, an English artist, in his *Lessons on Trees* and other books which in their time were influential in increasing the love of drawing. By the time he was fifteen years old Charles Faxon was able to make excellent copies in color of some of Audubon's birds, and during the summers made successful pencil and water color sketches of the scenery of northern New England.

What Faxon learned from schools was in the Jamaica Plain public schools and the Lawrence Scientific School at Cambridge, from which he was graduated as a civil engineer in 1867. At Cambridge he was noted for skill in mechanical drawing. Later he became deeply interested in English literature and taught himself to read nearly all the modern European languages. After graduating from the Lawrence Scientific School he was a clerk for a short time in the firm of leather merchants established by his father and conducted by two of his older brothers. During this time he made a journey among the mountains of western North Carolina, and in 1876 he passed six months in Europe, visiting Great Britain, France, Italy, Germany and Switzerland.

Faxon lived always in Jamaica Plain and did not care to travel except in western and northern New England where he spent a few weeks every spring and autumn, his last journey to northern New Hampshire having been in the autumn before he died. Berkshire County, Massachusetts, was a favorite field of the Faxons and they knew its flora well, as they did that of the Green Mountains of Vermont and of all northern New Hampshire. Outside of New England Faxon traveled little and never crossed the continent. In the spring of 1883 he passed a few weeks at Mobile, making sketches of some of the southern trees for The Silva, and in the winter and spring of 1885 he visited with me several of the West Indian islands in the hope of obtaining material of some of the West Indian trees which grow also in southern Florida. On this journey we returned by the way of New Orleans and went as far west as San Antonio, Texas. In April of the next year he visited with me the Florida Keys on one of the steamers of the United States Lighthouse Service and at this time made a large number of drawings. This was the last of Faxon's journeys beyond New England.

From 1879 to 1884 Faxon was an instructor of botany in the Bussey Institution of Harvard College. He was a Fellow of the American

Academy of Arts and Sciences, and in 1897 Harvard conferred on him an Honorary Master of Arts degree.

During the 70's Professor D. C. Eaton was preparing an illustrated work on the Ferns of North America and the Faxons, who were interested in Ferns, had opportunities for collecting northern material for him. This led to an invitation to Charles Faxon to make some of the colored drawings for Eaton's book. The first of these, that of *Aspidium Goldianum* Hook., was published in June 1879, and is plate xl. of volume i. The remaining plates of this volume and all those of volume ii. were drawn by Faxon.

Professor Spencer F. Baird, one of whose earlier papers was a catalogue of the trees and shrubs of Cumberland County, Pennsylvania, was anxious that the Smithsonian Institution should publish a Silva of North America, and as early as 1849 Isaac Sprague began to make colored drawings of the flowers and fruits of trees under the direction of Asa Gray who was to prepare a North American Silva for the national Government. This plan was dropped at the end of a few years, but in 1882 I accepted Professor Baird's invitation to undertake the preparation of a Silva of North America to be published by the Smithsonian Institution, and I asked Charles Faxon to join the Arboretum staff to take charge of the herbarium and library, and to make the drawings for the new Silva. He came to the Arboretum on May 12th of that year and remained in charge of the herbarium and library until his death, seeing them grow from insignificance to considerable importance; and much of the value and success of the Arboretum is due to the admirable manner in which he managed his departments.

Faxon began at once the drawings for The Silva, but at the end of a few months it was found that at the rate the Smithsonian Institution was willing to pay for the work it would take at least seventy-five years to complete it, and another arrangement was made for the publication of the book. Under the new arrangement Faxon made such good progress with the drawings that it was possible to begin publishing the first volume in 1891, and the last of his seven hundred and forty-four Silva plates appeared just twenty-one years after he began making the first drawing.

To illustrate some of the Guatemala plants described by John Donnell Smith Faxon made thirty-four drawings which were published in *The Botanical Gazette* between 1888 and 1894. They repre-

sent previously undescribed species and are accompanied by complete analyses of flowers and fruits. Four of this set are of new species of Ferns. These plates with others illustrating the flora of Guatemala were issued on large paper by Mr. Smith in 1906. In this set of thirty-four drawings are found some of the best examples of Faxon's work.

In the ten volumes of *Garden and Forest* (1888–1898) are published two hundred and eighty-five of Faxon's drawings. Among them are eight drawings of insects and their destructive work. Among the plants there is a large variety of subjects, including trees, shrubs, herbaceous plants and Ferns. Many previously undescribed species and one genus (*Robinsonella*, named in honor of the editor of this Journal) are found among these drawings. Among them, too, will be found the first illustrations of several plants which have now become common in gardens, and the only illustrations which have been published of many rare and interesting North American shrubs. Among these drawings are figures of thirteen North American species of Aster, Irises, Phloxes, Barberries, and a number of Japanese trees and shrubs. Seventeen of these illustrations of Japanese trees were reproduced in Sargent's *Forest Flora of Japan.*

In the two volumes of *Trees and Shrubs* (1902–1913) two hundred of Faxon's drawings are published. They illustrate new or little known ligneous plants, including two previously undescribed genera, *Faxonanthus* in honor of Edwin Faxon, and *Grypocarpa*, and one hundred and three previously undescribed species, principally from North America, Mexico, Central America, China and Japan.

In 1905 six hundred and forty-two of Faxon's drawings were published in Sargent's *Manual of the Trees of North America*, and in the last year of his life he was at work on some additional drawings for a new edition of this work. Between 1899 and 1913 thirteen of Faxon's drawings were published in *Rhodora*, and three of his drawings of Ferns will be found in the *Bulletin of the Torrey Botanical Club.* During thirty-four years, from 1879 to 1913, nineteen hundred and twenty-five of Faxon's drawings were published.

Faxon never cared to write for publication. His modesty, I think, deterred him from sharing with the public the information on many subjects of which he was master, and I can find only the following from his pen: On page 52 of the second volume of *Garden and Forest* there is a translation by him of a part of Professor Coutinho's paper

Os Quercus de Portugal, published in volume vi. of the *Boletin da Sociedade Broteriana*, on the fructification of the Cork Oak. On page 140 of the fourth volume there is an account by him of *Viaggio negli Stati Uniti dell' America Septentrionale fatto negli anni 1785, 1786, e 1787*, da Lugi Castiglioni. *Con alcune osservazioni sui Vegetabili* etc., a work which had been overlooked by American botanists; on page 292 of volume viii. will be found an article on the *Birds of the Arnold Arboretum* with lists of summer and winter residents; and on page 464 of the ninth volume there is a short note by him on *Aster infirmus* Michaux to accompany his illustration of that species which he had found growing in abundance at Lexington, Massachusetts. Of more importance is his translation from the Danish of an article on Wisconsin birds by the Danish ornithologist Grundtvig.[1] He contributed to *A Guide of the Arnold Arboretum* the chapter on birds. If Faxon wrote little his good taste, knowledge of languages and good judgment were always at the command of his associates, to whom for thirty years he rendered invaluable services in the careful and critical examination of their proof-sheets.

In his drawings Faxon united accuracy with graceful composition and softness of outline. He worked with a sure hand and great rapidity, and few botanical draftsmen have produced more. Certainly none of them have drawn the flowers, fruits and leaves of as many trees. Among the very few who in all time have excelled in the art of botanical draftsmanship Faxon's position is secure, and his name will live with those of the great masters of his art as long as plants are studied.

Faxon never lost his interest in reading or in Nature, and although he lived alone he had too many resources to be lonely. In all the years I knew him he was never sick, and only once was kept at home for a few days, the result of a fall on the ice. He was absolutely free of jealousies, and, although in temperament he was not sanguine and too often had unnecessary forebodings of trouble, his life was a happy one. He enjoyed to the end the long country walks to which, with his brothers, he had become accustomed as a boy; and to him a summer day in New England, when trees, birds and flowers taught him new

[1] *On the Birds of Shioclon in Bovina, Outagamie County, Wisconsin, 1881–83*, by F. Grundtvig. Translated by Charles E. Faxon from the *Videnskabelige Meddelelser fra den Naturhistoriske Forening i Kjøbenhavn for Aarel*, 1887, pp. 305–396, and published in the *Transactions of the Wisconsin Academy of Sciences, Arts and Letters*, x. pp. 74–158. Issued March, 1895.

lessons, or renewed old memories, brought pleasures which only the true lovers of Nature can understand. And he died, as he had often expressed the wish to die, suddenly and painlessly.

To those who knew Charles Faxon best he has left the memory of a modest, kindly, unselfish gentleman whose life was inspiration and help to us all.

Arnold Arboretum.

SOME NEW SPECIES AND VARIETIES OF POA FROM EASTERN NORTH AMERICA.

M. L. Fernald and K. M. Wiegand.

During the course of studies of the flora of northeastern North America the genus *Poa* has been found to be in great need of critical investigation, and the two following species are here proposed as partly clarifying the confusion which has so long existed in the series of plants passing as *P. debilis, P. sylvestris* and *P. alsodes.* The plants have heretofore been variously referred to these species, and sometimes one of them has been confused with *P. autumnalis.* The first is a common woodland species of the region from Newfoundland and southeastern Canada into the northeastern states and as a characteristic woodland plant may be called

Poa **saltuensis**, n. sp., caespitosa; culmis tenuibus 2–8.5 dm. altis basi foliosis, nodis caulinis 2–4 remotis; foliis 2–5 mm. latis imis elongatis caulinis brevibus laminis quam vaginis brevioribus marginibus laevibus vel ad apicem scabriusculis, ligulis superioribus 0.3–1.5 mm. longis plerumque erosis; paniculis primariis 0.6–2 dm. longis nutantibus secundis, ramis filiformibus adscendentibus nutantibus plus minusve scabris ad apicem floriferis, mediis imisque plerumque binis rare solitariis vel ternis; spiculis 3–5-floris 3.5–5.5 mm. longis; glumis subaequalibus acutis quam lemma proximum quartam partem brevioribus glabris; lemmatibus 3.2–4 mm. longis acutis basi arachnoideis supra glabris viridibus vel rare purpurascentibus, margine anguste hyalinis, nervis marginalibus intermediisque prominentibus; antheris 1–1.2 mm. longis flavescentibus; caryopsibus ellipsoideo-fusiformibus fulvis 2–2.5 mm. longis.

Caespitose: culms slender, 2–8.5 dm. tall, leafy at base; the cauline nodes 2–4, remote: leaves 2–5 mm. wide; the lower elongate; the

cauline short, with the blade usually shorter than the sheath, smooth-margined or somewhat scabrous at tip; ligule of the upper leaves short, 0.3–1.5 mm. long, usually erose: primary panicles 0.6–2 dm. long, nodding and secund; the branches long and slender, ascending and widely nodding, more or less scabrous, spikelet-bearing near the tips, the middle and lower in 2's, very rarely in 1's or 3's: spikelets 3–5-flowered, 3.5–5.5 mm. long: glumes subequal, acute, about three-fourths as long as the nearest lemma, glabrous: lemmas 3.2–4 mm. long, acute, glabrous except the webbed base, green or rarely purple-tinged; margin narrowly hyaline; the marginal and intermediate nerves prominent: anthers 1 1.2 mm. long, yellowish: grain ellipsoid-fusiform, reddish-brown, 2–2.5 mm. long. — Woodland thickets and recent clearings, extending from eastern Quebec to western Ontario, southward to Nova Scotia, southern Maine, southern New Hampshire, central Massachusetts, Connecticut, New York, the mountains of Pennsylvania, and westward to northern Michigan. Quebec. Gaspé Co.: alluvial woods, Grand River, June 30–July 3, 1904, *Fernald;* wooded banks of River Ste. Anne des Monts, July 14, 1906, *Fernald & Collins*, no. 167 in part; wooded and alluvial banks, River Ste. Anne des Monts, July 14–16, 1906, *Fernald & Collins*, no. 357 (type in Gray Herb.); calcareous alpine meadow at 1000–1100 m., Table-top Mt., August 7 & 12, 1906, *Fernald & Collins*, nos. 336, 338, 374; eastern syenitic slope of Table-top Mt., August 9 and 11, 1906, *Fernald & Collins*, no. 341. Rimouski Co.: damp woods, Bic, July 12, 1907, *Fernald & Collins*, no. 892. Prince Edward Island. Prince Co.: dry clearing, Alberton, July 11, 1912, *Fernald & St. John*, no. 6904. Queens Co.: dry woods and clearings, St. Dunstan's, July 10, 1914, *Fernald & St. John* in Pl. Exsicc. Gray. no. 122. Kings Co.: open woods, Morell, June 29, 1914, *Fernald & St. John*, no. 10914. Nova Scotia. Victoria Co.: Cold Brook, Sugar-loaf Mt., Aspy Bay, July 12, 1909, *J. R. Churchill.* Inverness Co.: moist woods, valley of the Barrasois River, July 25, 1914, *G. E. Nichols*, no. 326. Maine. Aroostook Co.: common in woods, on gravelly shores, etc., St. Francis, July 17, 1898, *Fernald*, no. 2177; abundant in recent clearings, Masardis, June 8, 1898, *Fernald*, no. 2174; low woods, Masardis, June 8, 1898, *Fernald*, no. 2179; Presque Isle, July 14, 1902, *Williams, Collins & Fernald;* rocky woods, Mars Hill, July 14, 1893, *Fernald.* Penobscot Co.: mossy woods, Orono, May 30, 1889, May 30, 1890, *Fernald*, June, 1891, *F. P. Briggs.* Piscataquis Co.: Brownville, 1905, *J. C. Parlin;* abundant in rich woods, Foxcroft, June 6, 1898, *Fernald.* Oxford Co.: open woods, Canton, June 20, 1906, *Parlin*, no. 2062. Washington Co.: recent clearings, rare, Perry, July 9, 1909, *Fernald*, no. 1313. Cumberland Co.: rich woods, Scarboro, May 31, 1903, *Fellows & Fernald.* York Co.: North Berwick, June, 1892, *Parlin.* New Hampshire. Coös Co.: damp woods, Second Lake, Pittsburg, July 2, 1907, *Pease*, no. 10219; river-bank, Atkinson & Gilmanton Academy Grant, July 1, 1910, *Pease*, no. 12590; wooded

bank of Moose River, Gorham, July 28, 1915, *Pease*, no. 16362; alluvial woods by Moose River, Randolph, June 17, 1908, *Pease*, no. 11283; dry woods, Carroll, June 18, 1908, *Pease*, no. 11265; Oakes Gulf, Mt. Washington, July 8, 1895, *Faxon, Kennedy, Williams;* head of Oakes Gulf, July 21, 1909, *Pease*, no. 12087; Crawford Notch, June 7, 1878 and June 7, 1888, *Faxon*. Grafton Co.: Flume, Lincoln, June 28, 1855, *William Boott;* dry open woods, Woodstock, July 11, 1915, *Fernald*, no. 10557; Squam Lake, Holderness, June 8, 1886, *Faxon;* West Lebanon, May 29, 1894, *G. G. Kennedy*. Cheshire Co.: rocky woods, Barrett Mt., New Ipswich, June 5, 1896, *Fernald*. (This material formed the basis of the illustration of *P. alsodes* in Hitchcock's treatment of *Poa* in Gray's Manual, edition 7.) Vermont. Lamoille Co.: summit of Mt. Mansfield, June 23, 1901, *T. O. Fuller*. Chittenden Co.: Burlington, May 30, 1895, May 31, 1897, *L. R. Jones;* Charlotte, June 2, 1877, *Pringle*. Orange Co.: swampy woods, Wells River, June 14, 1912, *C. H. Knowlton*. Windsor Co.: moist open field, Hartford, June 3, 1913, *C. H. Knowlton*. Rutland Co.: moist open woods, Brandon, May 26, 1917, *C. H. Knowlton*. Windham Co.: dry woods, Brattleboro, May 28, 1912, *L. A. Wheeler*. Bennington Co.: southeast slope, alt. 2500 ft., Mt. Equinox, Manchester, June 6, 1910, *J. A. Cushman*, no. 4387. Massachusetts. Middlesex Co.: near summit of Mt. Watatic, May 30, 1895, *T. O. Fuller*. Worcester Co.: Petersham, June 4, 1910, *G. G. Kennedy*. Franklin Co.: dry woodlands near Hoosac Tunnel, Rowe, June 24, 1913, *Fernald & Long*, no. 8786. Hampshire Co.: rich rocky woods, base of Mt. Holyoke, May 17, 1913, *Hubbard & Torrey*, no. 540. Berkshire Co.: Mt. Greylock, June 6, 1891, *W. P. Rich;* wet woods near Ice Glen, Stockbridge, July 3, 1906, *Ralph Hoffmann*. Connecticut. Hartford Co.: stream-bank, Talcott Mts., May, 1879, *Charles Wright*. New Haven Co.: dry woods, Waterbury, May 28, 1912, *Blewitt*, no. 336, June 8, 1913, *Blewitt*, no. 1611. Litchfield Co.: dry woods, Salisbury, June 10, 1905, *Weatherby & Bissell*, no. 1482. New York. Tompkins Co.: rich woodlands near Round Marshes, Dryden, May 31, 1914, *F. P. Metcalf*, no. 1619. Pennsylvania. Monroe Co.: rocky woods near Tannersville, May 30, 1902, *Canby*. Sullivan Co.: without locality, 1862, *C. E. Smith;* Union City, July 12, 1890, *Fernow*. Ontario. Thunder Bay District.: dry rocky ground, Current River, July 20, 1869, *J. Macoun;* dry woods, Nipigon, June 23, 1884, *J. Macoun*. Michigan. Ontonagon Co.: Iron River, June 14, 1868, *H. Gillman*.

Var. **microlepis**, n. var., foliis angustioribus 1–3.5 mm. latis, ligulis superioribus brevissimis; paniculis primariis 3–11 cm. longis; spiculis 3 3.8 mm. longis plerumque 2-floris; lemmatibus 2.4–3 mm. longis.

Leaves narrower, 1–3.5 mm. wide; the upper ligules very short: primary panicles 3 11 cm. long: spikelets 3–3.8 mm. long, mostly 2-flowered: lemmas 2.4 3 mm. long.— Newfoundland to Maine and northern New Hampshire. Newfoundland: wet clearings in spruce

woods along Gander River, Glenwood, July 12 & 13, 1911, *Fernald & Wiegand*, no. 4633 (TYPE in Gray Herb.); thicket by Birchy Pond Stream, East Branch of the Humber, July 11, 1910, *Fernald & Wiegand*, no. 2629; damp thicket near Goose Ponds, July 10, 1910, *Fernald & Wiegand*, no. 2630; dry bank of Steady Brook, marble region between Mt. Musgrave and Humber Mouth, July 15, 1910, *Fernald & Wiegand*, no. 2656; mossy brookside, Summerside, July 11, 1910, *Fernald & Wiegand*, no. 2627; brooksides and damp bushy ravines and subalpine thickets, limestone tablelands, alt. 200–300 m., Table Mountain, Port à Port Bay, July 16 & 17, 1914, *Fernald & St. John*, nos. 10786, 10787. QUEBEC. Gaspé Co.: dry woods, Grindstone, Magdalen Islands, July 22, 1912, *Fernald, Bartram, Long & St. John*, no. 6903; alluvial woods, River Ste. Anne des Monts, August 3–17, 1905, *Fernald & Collins*, July 14, 1906, *Fernald & Collins*, no. 167 in part. Bonaventure Co.: alluvial woods, Grand Cascâpedia River, July 12–15, 1905, *Williams, Collins & Fernald;* arbor-vitae swamp, Carleton, July 24 & 27, 1904, *Collins, Fernald & Pease.* Quebec Co.: vicinity of Montmorenci Falls, July 28, 1905, *J. Macoun*, no. 69200. MAINE. Aroostook Co.: abundant in dry soil, Wallagrass, June 14, 1898, *Fernald*, no. 2175; ledgy shores and low thickets, Island Falls, June 9, 1898, *Fernald*, no. 2181. Penobscot Co.: low woods, Orono, June 23, 1893, *Fernald.* Piscataquis Co.: gravelly thickets and riverbanks, Sangerville, June 29, 1895, July 7, 1897, *Fernald;* wooded bank, Dover, June 28, 1894, *Fernald;* rocky woods, Brownville, June 22 & 28, 1905, *Parlin*, nos. 1865, 1869. Franklin Co.: Haley Pond, Rangeley, 1894, *Kate Furbish.* Androscoggin Co.: South Poland, 1893, *Kate Furbish.* NEW HAMPSHIRE. Coös Co.: alluvial woods of Dead Diamond River, Dartmouth College Grant, July 1, 1910, *Pease*, no. 12602; near Gorge of Diamond River, Dartmouth College Grant, July 1, 1910, *Pease*, no. 12625; dry wooded roadside, Pittsburg, July 10, 1917, *Pease*, no. 10082.

P. saltuensis is very similar in aspect to *P. debilis* Torrey, but the latter species has usually shorter, obtuse and much firmer chartaceous lemmas; broader glumes with mostly scabrous keels; longer cauline ligules (usually 2–2.5 mm. long); and smaller anthers (0.6–0.8 mm. long). *P. saltuensis*, var. *microlepis* has the spikelets as small as in *P. debilis*, but they maintain the acute lemmas and the anther-measurements of typical *P. saltuensis*, and the variety is decidedly more boreal. In distribution *P. saltuensis* is much more northern and eastern than *P. debilis*, the latter species extending from Vermont, Worcester Co., Massachusetts, and northern Connecticut through New York and Ohio to Michigan and Wisconsin. In central New York, where both species occur, *P. saltuensis* is found in the uplands associating with plants of boreal distribution, while *P. debilis* is a

species of lower levels near the lake-shores, where the flora is generally decidedly southern in aspect.

The second species here proposed is a small plant of boggy habitats which is abundantly distinct from the species to which it has heretofore been referred. This plant we propose as

Poa **paludigena**, n. sp., subcaespitosa vel vix caespitosa; culmis tenuibus 1.5–7 dm. altis laevibus vel superne minute scabris basi purpurascentibus, nodis 3–5; foliis angustis 0.25–2(–3) mm. latis laminis superioribus quam vaginis brevioribus vel rare eis aequalibus; ligulis brevibus truncatis superioribus 0.7–1.5 mm. longis; paniculis 0.3–1.3 cm. longis nec secundis valde laxis disjunctisque, ramis elongatis tenuibus vix flexuosis patentibus rare reflexis glabris vel minute scabris imis mediisque plerumque binis rarissime ternis ad apicem floriferis; spiculis 3–6 mm. longis 2–5-floris; glumis quam lemma proximum dimidio vel saltim quartam partem brevioribus; lemmatibus 2.5–3.5 mm. longis basi vix arachnoideis acutis vel acutiusculis apice scariosis plerumque purpurascentibus, nervis mediis marginalibusque pilosis plerumque infra medium, nerviis intermediis glabris obscuris; antheris 0.5–0.8 (rare –1) mm. longis.

Culms slender, 1.5–7 dm. high, subsolitary or in small tufts, smooth or minutely scabrous at summit, purplish at the base, without elongated root-stocks; cauline nodes 3–5: leaves narrow, 0.25–2 (rarely –3) mm. wide; blade of the upper shorter than or rarely equalling the sheath; ligules short, truncate, those of the upper leaves 0.7–1.5 mm. long: panicle 0.3–1.3 dm. long, not secund, very loose and open; branches long and slender, scarcely flexuous, widely spreading, rarely reflexed, glabrous or minutely scabrous, the lower and median chiefly in 2's, very rarely in 3's, spikelet-bearing above the middle: spikelets 3–6 mm. long, 2–5-flowered: glumes one-half to three-fourths the length of the nearest lemma: lemmas 2.5–3.5 mm. long, scarcely webbed at base, acute or acutish; the tip scarious-margined and often purple-tinged; midrib and marginal nerves pilose chiefly below the middle; the intermediate nerves glabrous and obscure: anthers very small, 0.5–0.8 (rarely –1) mm. long.— In bogs or boggy places, central New York, Michigan, Illinois and Wisconsin. New York. Tompkins Co.: in sphagnum, Mud Creek, Dryden, June 30, 1907, *Wiegand*, no. 7574. Wayne Co.: in sphagnum, Westbury bog, Butler, June 24, 1917, *Metcalf & Wiegand*, no. 7572 (type in Gray Herb.). Michigan: "this *Poa* found in sphagnous swamps in Michigan, nearest *P. flexuosa* Muhl.?" June 16, 1895, *C. F. Wheeler*. Illinois. Kane Co.: Elgin Swamp, *Vasey*. Wisconsin. Brown Co.: mossy cold springs, June 25, 1881, *J. H. Schuette*, no. 104; Upper Hill Creek in town of Ashwaubenon, June 25, 1881, *J. H. Schuette;* Duck Creek, Big Suamico, June 21, 1895, *J. H. Schuette*.

Related to *P. autumnalis* Muhl. and *P. reflexa* Vasey & Scribner. From the former it differs in the bog habitat, finer and less caespitose

habit, absence of hairs between the nerves of the lemma, the less prominent intermediate nerves of the lemma, and the much smaller anthers, those of *P. autumnalis* being 1.3–1.6 mm. long. From *P. reflexa*, *P. paludigena* is distinguished by the more slender, less caespitose habit, narrower leaves, shorter ligule and smaller spikelets. The anthers of the New York specimens were purple or violet when fresh; this may prove to be a constant specific character.

P. paludigena is apparently the plant described as *P. sylvestris* Gray, var. *palustris* Dudley, Cayuga Fl. 128 (1886). We have seen none of Dudley's material, but his description and the stations cited indicate *P. paludigena*, which, however, differs in many characters from *P. sylvestris*. The latter species has much broader leaves; stiffer longer panicles, with the more numerous branches strongly divergent and becoming reflexed; obtuse pubescent lemmas strongly webbed at base and with the midrib pilose to the tip and the median nerves prominent; and longer anthers (about 1.3 mm. long). The validity of the Linnean *Poa palustris* makes a new name necessary for *P. sylvestris*, var. *palustris* Dudley.

A NEW SPECIES OF BLADDERNUT.

J. Francis Macbride.

In the fall of 1917, Mr. H. C. Brigham of the Walding, Kinnan & Marvin Co., wholesale druggists of Toledo, Ohio, sent to the Gray Herbarium pods and leaves from one of three bushes of *Staphylea* which were growing in his garden of native plants and which he had transplanted from the woods some years before. In his first communication, dated Oct. 1, Mr. Brigham wrote as follows: "They [the shrubs] were very small, but grew rapidly, and one of them is now about twenty feet high, while the others are more than twelve feet in height. As soon as they began to blossom and bear fruit, I noticed a strong dissimilarity between one of them and the other two. These distinctions I will set down here as briefly as may be:

"The ordinary form has a large, oblong, bright green pod, usually somewhat wrinkled. The odd form has a much smaller, pear-shaped

pod, smooth, and brightly tinted on one or two sides with pink, darkening sometimes to maroon. The latter has almost always more seeds than the former, sometimes six or seven. It is a very beautiful and showy shrub, on account of its brightly colored fruit.

"The lower leaflets of the common form are distinctly oblique at the base, and not far from sessile. Those of the odd one are not at all oblique, are darker in hue, somewhat longer, and are longer stalked. The two kinds are much more unlike in general appearance than I can well describe. The odd one is much more profuse in flowers and fruit — but this may have no bearing. Its pods are borne in dense masses."

At the suggestion of Dr. St. John (who studied the fruiting material first submitted) the matter was held in abeyance until flowers could be secured for comparison. Mr. Brigham has now sent specimens of both the typical and aberrant forms and writes as follows concerning them: "I made an examination of the flowers a day or two ago and it seems to me the structure of those of both specimens is identical except that the odd one has smaller flowers; the ordinary form, growing within a few feet of the other, came into bloom about a week ahead of it. The flowers of the common form are entirely devoid of any maroon or purplish tint. It is curious that the maroon coloring so conspicuous in the mature fruit of the odd kind should appear so strongly in the flower-buds."

Study of these fruiting and flowering specimens has failed to disclose other differences than those so carefully noted by Mr. Brigham, and although these differences are essentially vegetative in character they may be taken as indicating a distinct species, since they are apparently very constant, as shown by the following quotation from Mr. Brigham.

"I have found three good-sized shrubs of the variety, in a location several miles from that in which the first one was obtained. They were growing among other shrubs of the typical form, from which I conclude that surrounding conditions of soil, moisture and exposure do not at all account for the variation.

"In addition to the plants mentioned above, I also located, late last fall, in a woodland some miles out, a solitary *Staphylea* which showed a still more marked divergence from the type in fruit and what remained of the leaves. I have ransacked many thickets and brook-sides about Toledo to see if I could find a plant or plants which would show an intermediate stage between the two forms, but I have found none."

The petiolulate lateral leaflets, the shorter flowers and fruits and the more numerous seeds are the chief characters, then, of the new species which may very appropriately be known as

Staphylea Brighamii, spec. nov., *S. trifoliae* peraffinis; foliolis lateralibus petiolulatis basi non haud obliquis, laminis 6–8 cm. longis circa 3 cm. latis, petiolis 5–8 mm. longis; floribus brevioribus circa 6 mm. longis, sepalis purpureo-tinctis; capsula plus minusve purpureo-tincta solum circa 3 cm. longa et fere 3 cm. diametro; seminibus saepius 6–7.

Very similar to *S. trifolia* but lateral leaflets petiolulate and not at all oblique at base; blades 6–8 cm. long, about 3 cm. broad, petioles 5–8 mm. long: flowers shorter, about 6 mm. long, sepals purplish: capsule more or less tinted with purple only about 3 cm. long and nearly as thick; seeds often 6 or 7. — Ohio: near Toledo, Oct. 1, 1917, and May 6, 14, 1918, *H. C. Brigham* (type, Gray Herb.).

Gray Herbarium.

THE AMERICAN REPRESENTATIVES OF EQUISETUM SYLVATICUM.

M. L. Fernald.

European descriptions of *Equisetum sylvaticum* and many American descriptions copied from them are nearly uniform in describing the branches as rough; thus, we find Schkuhr saying: "Rami verticillati, numerosi....scabri,"[1] or Milde writing "Die Aeste....rauh,"[2] while European figures very regularly show sections of the branches with conspicuous trichome-like spicules. These descriptions and illustrations have always been perplexing to certain American students who have been familiar with the plant of our woodlands and meadows, which is generally called *E. sylvaticum*, because in the American plant the branches are so universally glabrous or smooth. Examination of the material in the Gray Herbarium and the herbarium of the New England Botanical Club shows that there are 194 sheets of North American specimens and of these 194 sheets 188 have the branches

[1] Schkuhr, Krypt. Gewächse, 170 (1809).
[2] Milde, Gefäss.-Crypt. in Schles. 432 (1858).

quite smooth or with the merest suggestion of scabridity on the angles, while 4 have a more definite scabrousness on the young branches. Only 2 sheets, however, have the angles sufficiently scabrous to be comparable with the bulk of European specimens. One of these sheets, in which the branches are conspicuously scabrous, is the type of *E. sylvaticum*, var. *squarrosum* A. A. Eaton [1] from near Nome City, Alaska. The other material is from Parry Sound on Georgian Bay, Ontario. These two plants, from near Cape Nome and from Parry Sound, are inseparable from characteristic European specimens and must pass as essentially typical *E. sylvaticum*. Occasionally in Europe the branches are smooth as in the American plant, but the European material has so generally scabrous branches that few European authors, if any, have made note of smooth branches in the European plant. On the other hand, the tremendous preponderance of specimens with smooth branches in America (188 out of 194 sheets now before the writer) indicates that the smooth-branched tendency is the normal variation in North America, and as such it should be definitely designated as a geographic variety.

Just as the European plant differs in the degree of branching, the American is highly variable, but in general these variations in the degree of branching are of minor importance and for the most part not of sufficient constancy to merit special notice. It so happens, however, that the only name available for the smooth-branched American plant is one which was given by Milde to one of the less common variations, a northern tendency in which the branches are simple or subsimple or only very slightly forked. This, the plant found in Greenland, Labrador and much of the cooler region of Canada, was described very definitely by Milde as var. *pauciramosum* "Caulis erectus, inferne nudus, sublaevis, rami subsimplices. Labradoria (herb. Breutel). (Fig. 2.)" [2] The figure illustrating this variety shows it to be the characteristic plant of much of Labrador, Newfoundland and Quebec. This more slender form of the American plant, with the simple or subsimple smooth branches, and a very similar, though often larger, development of the same variation, occurs southward to Massachusetts, Connecticut and Ohio and very locally in the Selkirk Mountains of British Columbia.

A commoner American plant, however, has the branches very

[1] A. A. Eaton, Fern Bull. ix. 36 (1901).
[2] Milde, Mon. Equiset. 292, t. 9, fig. 2 (1865).

freely forking, much as in the European var. *pyramidale* Milde, but var. *pyramidale* has the scabrous angles of the branches characteristic of most European material, while the freely forking American plant is clearly only an extreme form of var. *pauciramosum*. Other variations in America of less pronounced character than those just discussed have been identified by the late A. A. Eaton with Milde's varieties and forms of the European plant, but so far as the writer can find from examination of Mr. Eaton's American material referred to var. *capillare* (Hoffm.) Willd., var. *robustum* Milde, var. *praecox* Milde, etc. these American plants are all phases of the smooth-branched North American var. *pauciramosum*. The form with freely forking branches, the only form of var. *pauciramosum* which seems to merit a special designation, is less common northward than the form with simpler branches, but in the southern part of the range it is distinctly more abundant, being the common plant of southern New England, southward into Pennsylvania and locally westward to British Columbia.

The three most pronounced American variations of *E. sylvaticum* may be briefly defined as follows:

E. SYLVATICUM L. Sp. Pl. ii. 1061 (1753). Branches copiously scabrous, especially along the lower internodes.— Common in Eurasia.[1] In North America apparently very local. The following specimens have been examined: ONTARIO: Parry Sound, Georgian Bay, August 21, 1901, *E. L. Moseley*. ALASKA: among alder and willow, 11 miles west of Nome City, August 5, 1900, *J. B. Flett*, no. 1524 (type of var. *squarrosum* A. A. Eaton, Fern Bull. ix. 36).

Var. PAUCIRAMOSUM Milde, Mon. Equiset. 292, t. 9, fig. 2 (1865).— Greenland and Labrador south to New England and locally westward to British Columbia; also eastern Asia and rarely in Europe. Material slightly transitional to the preceding has been seen from New Hampshire, Vermont, Massachusetts and Yukon.

Var. PAUCIRAMOSUM, forma **multiramosum**, n. f., ramis valde furcatis laevibus.— Southern Labrador and Newfoundland to Pennsylvania, locally westward to British Columbia. TYPE in Gray Herb. collected by *A. A. Heller* at Penryn, Lebanon County, Pennsylvania, May 30, 1889.

GRAY HERBARIUM.

[1] The writer can find no basis for the extreme restriction of the European range of this plant given by Mr. Eaton, who says "It grows from the highest north in Europe to about 71° N. Lat." — Fern Bull. ix. 34 (1901).

A Salix rostrata Hybrid?— At Franklin, Connecticut, there is a singular staminate willow, which the writer found May 14, 1917. It is a shrub 4 meters high, made up of five or six widely branching stems, springing from a common root, and all blooming profusely. Each flower has two filaments, which are united so as to appear as one, and hairy for their entire length. The two anthers bear copious pollen. The leaves seem to be good *Salix rostrata.* The other willows in the vicinity are *S. discolor, S. sericea* and *S. cordata,* species which, like normal *S. rostrata,* have two glabrous and distinct filaments. The union of two hairy filaments suggests affinity with *S. purpurea,* since our other willows with hairy filaments have the filaments free. In its other characters, the shrub does not betray the influence of any of our willows, with hairy filaments, and the modification of the inflorescence may not be the result of hybridization. One would hardly expect to meet with *S. purpurea* in a remote swamp of a Connecticut hill town. Specimens have been deposited in the Gray Herbarium.— R. W. Woodward, New Haven, Connecticut.

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